AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1 (Withdrawn): A nanoparticle comprising a core particle, wherein the core particle comprises a magnetic material and a fluorescent material, and wherein the nanoparticle has a particle size less than about 1 micrometer.

Claim 2 (Withdrawn): The nanoparticle of claim 1, wherein the particle size is less than about 750 nanometers.

Claim 3 (Withdrawn): The nanoparticle of claim 1, wherein the particle size is less than about 500 nanometers.

Claim 4 (Withdrawn): The nanoparticle of claim 1, wherein the particle size is less than about 300 nanometers.

Claim 5 (Withdrawn): The nanoparticle of claim 1, wherein the particle size is ranging from about 35 nanometers to about 200 nanometers.

Claim 6 (Withdrawn): The nanoparticle of claim 1, wherein the particle size is ranging from about 80 nanometers to about 200 nanometers.

Claim 7 (Withdrawn): The nanoparticle of claim 1, wherein the magnetic material comprises a superparamagnetic, a paramagnetic or a ferromagnetic material.

Claim 8 (Withdrawn): The nanoparticle of claim 1, wherein the magnetic material comprises a metal oxide.

Claim 9 (Withdrawn): The nanoparticle of claim 8, wherein the metal oxide is selected from the group consisting of oxide of cobalt, nickel, manganese, and iron.

Claim 10 (Withdrawn): The nanoparticle of claim 8, wherein the oxide of iron is Fe_3O_4.

Claim 11 (Withdrawn): The nanoparticle of claim 8, wherein the oxide of iron is γ-Fe_2O_3.

Claim 12 (Withdrawn): The nanoparticle of claim 1, wherein the saturation magnetization of the nanoparticle is between about 5 emu/g to about 60 emu/g.

Claim 13 (Withdrawn): The nanoparticle of claim 1, wherein the fluorescent material is selected from the group consisting of a fluorescent dye, a fluorescent organo-metallic compound, an up-converting fluorescent phosphor, a down-converting fluorescent phosphor, and a fluorescent quantum dot.

Claim 14 (Withdrawn): The nanoparticle of claim 13, wherein the up-converting fluorescent material is a phosphor fluoride.

Claim 15 (Withdrawn): The nanoparticle of claim 14, wherein the phosphor fluoride has a formula of YF_3:Yb,Er.

Claim 16 (Withdrawn): The nanoparticle of claim 14, wherein the phosphor fluoride has a formula of $NaYF_4$:Yb,Er.

Claim 17 (Withdrawn): The nanoparticle of claim 13, wherein the up-converting phosphor contains molybdenum.

Claim 18 (Withdrawn): The nanoparticle of claim 13, wherein the down-converting phosphor has a formula of CaS:Eu^{3+} or SiAlO2:Eu^{3+}.

Claim 19 (Withdrawn): The nanoparticle of claim 13, wherein the fluorescent quantum dot is selected from the group consisting of CdSe/CdS, ZnS/CdSe, and GaAs.

Claim 20 (Withdrawn): The nanoparticle of claim 13, wherein the fluorescent material is a fluorescent nanometer-sized particle.

Claim 21 (Withdrawn): The nanoparticle of claim 20, wherein the fluorescent nanometer-sized particle is a polymer or silica particle containing a fluorescent material.

Claim 22 (Withdrawn): The nanoparticle of claim 1, wherein the core particle comprises a magnetic particle covered by a layer of the fluorescent material .

Claim 23 (Withdrawn): The nanoparticle of claim 1, wherein the core particle comprises a fluorescent particle covered by a layer of the magnetic material.

Claim 24 (Withdrawn): The nanoparticle of claim 1, wherein the core particle comprises fluorescent particles doped with the magnetic material.

Claim 25 (Withdrawn): The nanoparticle of claim 1, wherein the core particle comprises magnetic particles doped with the fluorescent material.

Claim 26 (Withdrawn): The nanoparticle of claim 1, wherein the core particle comprises a magnetic particle, a fluorescent particle, and a material to bind the magnetic particle and the fluorescent particle together.

Claim 27 (Withdrawn): The nanoparticle of claim 26, wherein the binding material comprises SiO_2.

Claim 28 (Withdrawn): The nanoparticle of claim 1, wherein the core particle has a coating layer.

Claim 29 (Withdrawn): The nanoparticle of claim 28, wherein the coating layer comprises SiO_2.

Claim 30 (Withdrawn): The nanoparticle of claim 1, wherein the surface of the nanoparticle is modified to comprise a functional group.

Claim 31 (Withdrawn): The nanoparticle of claim 30, wherein the functional group is selected from the group consisting of -COOH, -CHO, -NH_2, -SH, -S-S-, an epoxy group, and a trimethoxysilyl group.

Claim 32 (Withdrawn): The nanoparticle of claim 1, which comprises a bio-molecule.

Claim 33 (Withdrawn): The nanoparticle of claim 32, wherein the bio-molecule is covalently linked to the nanoparticle.

Claim 34 (Withdrawn): The nanoparticle of claim 32, wherein the bio-molecule is selected from the group consisting of an amino acid, a peptide, a protein, a nucleoside, a nucleotide, an oligonucleotide, a nucleic acid, a vitamin, a monosaccharide, an oligosaccharide, a carbohydrate, a lipid and a complex thereof.

Claim 35 (Original): A process of preparing a nanoparticle comprising a magnetic particle coated with a phosphor fluoride, which process comprises:

a) dispersing a nanometer-sized magnetic particle and an aqueous fluoride-containing compound in de-inonized water;

b) contacting the mixture of step a) with an aqueous solution containing soluble salts of a phosphor host, an absorber/emitter pair, and a rare-earth metal chelator by stirring for a sufficient time to allow formation of a phosphor fluoride precipitate which forms a coating around the magnetic particle; and

c) heating the magnetic particle with the phosphor fluoride coating of step b) at a temperature ranging from about 300°C to about 450°C for a period of time ranging from about 1 hour to about 10 hours to obtain the phosphor fluoride coated magnetic particle that emits light in the visible wavelength range when excited by long wavelength light.

Claim 36 (Original): The process of claim 35, wherein the nanometer-sized magnetic particle and the aqueous fluoride-containing compound are dispersed in the de-inonized water by sonication.

Claim 37 (Original): The process of claim 35, further comprising coating the phosphor fluoride coated magnetic particle of step c) with a coating layer.

Claim 38 (Original): The process of claim 37, wherein the coating layer comprises SiO_2.

Claim 39 (Original): The process of claim 35, wherein the surface of the nanoparticle is modified to comprise a functional group.

Claim 40 (Original): The process of claim 39, wherein the functional group is selected from the group consisting of -COOH, -CHO, -NH_2, -SH, -S-S-, an epoxy group, and a trimethoxysilyl group.

Claim 41 (Original): The process of claim 35, wherein the phosphor host is selected from the group consisting of yttrium, lanthanum and gadolinium.

Claim 42 (Original): The process of claim 35, wherein the absorber is ytterbium and the emitter is selected from the group consisting of erbium, holmium, terbium and thulium.

Claim 43 (Original): The process of claim 35, wherein the rare-earth metal chelator is selected from the group consisting of ethylenediamineteraacetic acid, triethylenetetraaminhexaacetic acid, diethylenetriaminepentaacetic acid, hydroxyethylethylenediaminetriacetic acid, 1,2-diaminocyclohexanetetraacetic acid, ethylene glycol bis (b-aminoethylether) tetraacetic acid and a salt thereof.

Claim 44 (Original): The process of claim 35, wherein the aqueous fluoride-containing compound is selected from the group consisting of NaF, KF, NH_4F and HF.

Claim 45 (Original): The process of claim 35, wherein the aqueous fluoride-containing compound is contained in an aqueous solution prior to or concurrently with contacting with the aqueous solution of soluble salts of the phosphor host, the absorber/emitter pair and the rare-earth metal chelator.

Claim 46 (Original): The process of claim 35, wherein the soluble salts of the phosphor host and the absorber/emitter pair are obtained by dissolving the corresponding metal oxide in hydrochloric acid or nitric acid and subsequently removing the residual acid.

Claim 47 (Original): The process of claim 35, wherein the amount of the rare-earth metal chelator is about 0-1 times the amount of total rare-earth ions in the aqueous solution.

Claim 48 (Withdrawn): A process of preparing a nanoparticle comprising fluorescent magnetic particles coated with silica, which process comprises:

a) dispersing nanometer-sized magnetic particles and nanometer-sized fluorescent particles in an alcohol;

b) adding de-ionized water and ammonia having a concentration of 28% to the mixture of step a) at a temperature ranging from about 20°C to about 80°C; and

c) stirring the mixture of step b) after adding n-ethyl silicate (TEOS) for a period of time ranging from about 0.5 hour to about 8 hours to obtain the nanoparticle.

Claim 49 (Withdrawn): The process of claim 48, wherein the magnetic particles are selected from the group consisting of superparamagnetic, paramagnetic, and ferromagnetic nanometer sized particles, and nanometer-sized magnetic oxide of cobalt, nickel, and manganese.

Claim 50 (Withdrawn): The process of claim 48, wherein the fluorescent particles have a formula of YF_3:Yb,Er.

Claim 51 (Withdrawn): The process of claim 48, wherein the fluorescent particles have a formula of $NaYF_4$:Yb,Er.

Claim 52 (Withdrawn): The process of claim 48, wherein the fluorescent particle is a fluorescein-doped silica particle.

Claim 53 (Withdrawn): The process of claim 48, wherein the surface of the nanoparticle is modified to contain a functional group.

Claim 54 (Withdrawn): The process of claim 53, wherein the functional group is selected from the group consisting of -COOH, -CHO, $-NH_2$, -SH, -S-S-, an epoxy group, and a trimethoxysilyl group.

Claim 55 (Withdrawn): The process of claim 48, wherein the alcohol is 3-propanol.

Claim 56 (Withdrawn): The process of claim 48, wherein the nanometer-sized magnetic particles and the nanometer-sized fluorescent particles are dispersed in the alcohol by sonication for a period of time ranging from about 0.5 hour to about 1 hour.